



# STVVGLNA

## General-purpose, variable-gain, low-noise, RF amplifier for broadcast receiver applications

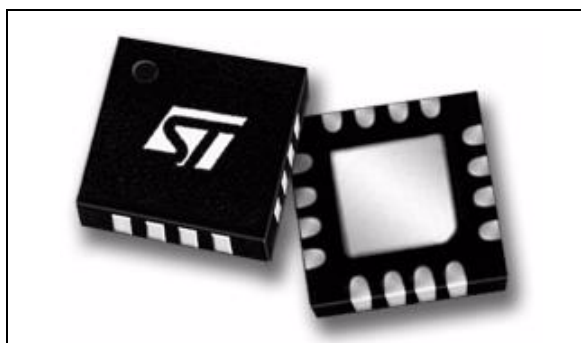
Data brief

### Features

- 75-Ω single-ended input impedance
- 75-Ω single-ended or 150-Ω differential output impedance
- Dual differential or single-ended outputs
- Single 3.3-V DC supply
- Input frequency range 50 to 2150 MHz
- Fully integrated RF AGC with power monitoring
- Low external component count
- Low power consumption (145 mW typical)
- Temperature range -35 °C to 85 °C
- Compatible with 5-V and 3.3-V I<sup>2</sup>C bus
- I<sup>2</sup>C bus control (option)
- Four selectable I<sup>2</sup>C addresses C8,CA,CC,CE

### Applications

- Satellite set-top boxes
- SMATV RF accessories
- LNBs
- DVB-T active indoor antennas



### Package

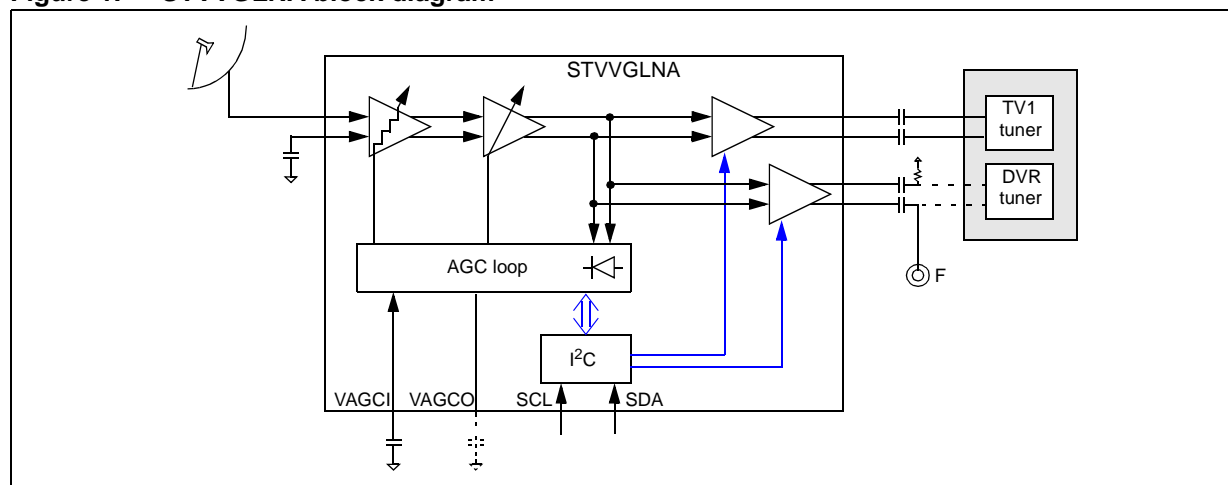
- VFQFPN-16L 3x3x0.85 mm<sup>3</sup> with exposed pad down (EPD)
- Environmentally friendly packaging, RoHS (2002/95/EC) compliant.

### Description

The STVVGLNA is a general-purpose, low-noise amplifier with a gain range of -17 dB to +15 dB. Its gain is regulated either autonomously by an integrated AGC loop or by software control.

It can be used, for example, as an input amplifier for a satellite set-top box.

Figure 1. STVVGLNA block diagram



# 1 Introduction

The STVVGLNA is a front-stage amplifier designed for set-top boxes. It has high input power dynamic range to allow the optimization of sensitivity and linearity requirements.

The STVVGLNA has several operating modes suitable for different signal conditions:

- automatic wide-band mode, internal AGC (the default mode)
- semi-automatic wide-band mode, internal AGC
- fixed gain mode, no AGC
- variable gain with external AGC (driven by demodulator, for example)

The mode of operation is programmable via the I<sup>2</sup>C bus.

The STVVGLNA also provides a RF-signal-level indication which may be interrogated via the I<sup>2</sup>C bus. This is useful for installation and status information.

At power-on, the STVVGLNA starts in automatic and autonomous AGC mode so that it can operate in satellite set-top boxes, LNBs or SMATV accessories without any software assistance.

| Features   | Benefits  |
|--|---|
| Active amplitude compensation and balanced/differential operation. | Simplified RF layout and increased robustness to interference.                |
| Four AGC/Gain programmable operating modes.                        | Flexible AGC strategy.  |
| Programmable via I2C bus.  | The device can be $\mu$ P controlled.   |
| Wide range of input frequencies.                                   | Applications range from satellite receivers down to VHF antenna amplifiers.   |
| Low component count plus tiny package with exposed pad.            | Small BOM and minimal use of PCB area.  |
| Pre programmed automatic wide-band internal AGC mode.              | No micro processor is required if the STVVGLNA is to be used in default mode. |

## 2 Ordering information

**Table 1. Device summary**

| Order code | Temperature range | Package        | Packaging |
|------------|-------------------|----------------|-----------|
| STVVGLNA   | -35 to 85 °C      | VFQFPN-16L EPD | Tray      |
| STVVGLNAT  | -35 to 85 °C      | VFQFPN-16L EPD | Reel      |

## 3 Revision history

**Table 2. Document revision history**

| Date        | Revision | Changes          |
|-------------|----------|------------------|
| 01-Jun-2011 | 1        | Initial release. |

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